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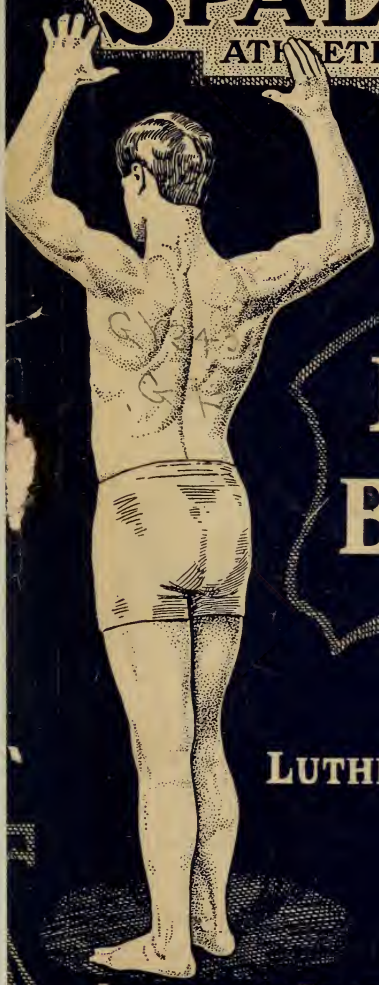

MUSCLE BUILDING

BY

LUTHER HALSEY GULICK, M.D.

AMERICAN SPORTS PUBLISHING CO.
21 Warren Street, New York.

A. G. SPALDING & BROS.

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MUSCLE BUILDING

Practical Points

for

Practical People

LUTHER HALSEY GULICK, M. D.
President American Physical Education Association—Director Physical Training Public Schools, New York City

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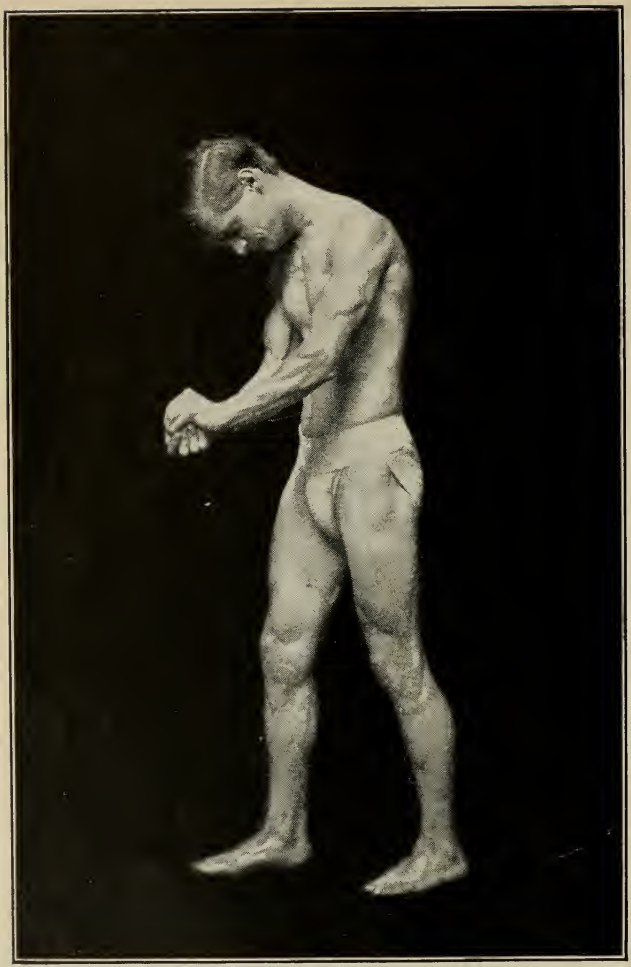
MUSCLE BUILDING

VIBRATORY EXERCISE.

Many business men at forty are fat and flabby; their arms are weak, their hands are soft and pulpy, their abdomens are prominent and jelly-like. When they run a block for a train, they puff and blow like disordered gasoline autos. Men get into this condition because they sit still too much; because they eat more than they need, and because they drink. No one gets into this condition because he wishes to. It is against the wish of everyone to have his body in this kind of order. He well knows that it lessens his working capacity, that it takes away a great deal of the fun of living; that it prevents his enjoying vigorous things as he did when a young man; and that it will probably cut off years at the end of his life. The reason that he does not come out of this condition is that he thinks it will involve a serious modification of his mode of living, a serious alteration of his business habits. He thinks it will involve

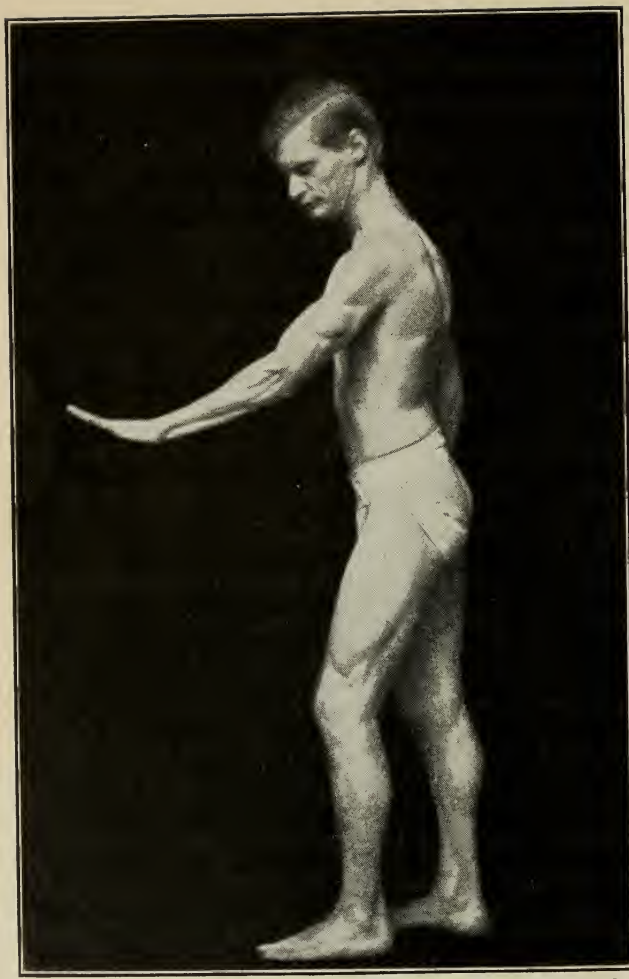


No. 1—The way in which squeezing intensly uses many muscles is beautifully shown here. The model has rolled up a wad of paper and is squeezing it as hard as he can.

doing an hour or two of monotonous exercise in a gymnasium every day.

Every man would like to have a firm hand, strong, clean-cut arms, muscles that stand out, a body that is solid, held together by firm muscles, strong vigorous neck, and large chest. A man cannot very well change the shape of the bones of his body; but aside from this, much can be done in a very short time every day. A month or two of work will help much to bring about that shape of the body that one desires, and that character of muscle which is one of the marks of vigorous manhood.

It is the purpose of this book to show how business men may, by a few minutes each day, develop their muscles in the way that they desire. That which is discussed in this article is not a complete system of physical training. This work does not aim to make a man graceful; it does not aim to make him a long distance runner, a jumper, or a fencer. This plan of exercise does succeed in almost every case, in quickly making a man muscularly strong and well developed. It does tend to make a man stand straighter, to respect himself more, to have a clearer



No. 2—Exercises of contracting the hand, if they are always followed by exercises by extending the fingers, which are shown in this picture, will never leave the hand in bad position. The delicate modeling of the muscles of the forearm is admirably shown.

head and better body. It does not take any apparatus —it can be done anywhere; it takes but little time. All that it demands is the willingness to do it on the part of the man. Many men have, in a single month, changed the whole appearance of their bodies from one of weakness to one of strength, from a condition of flabbiness to a condition of solidity. It is a common achievement for a man to increase the girth of his upper arm half an inch, or even an inch, in a month; to put two inches on his chest in the same length of time. If a man's muscles are fat to begin with, he may expect in the course of a month, to make them hard and muscular. In this case he will not expect to increase the size, as much as he will if his arms are merely soft to begin with and he has simply to build up.

THE ARMS.

We will begin with an explanation of how to develop the arms. Ordinarily, in the gymnasium one pulls against weights running over a pulley, or he lifts dumb bells, the object being to furnish resistance for the muscles to work against; good results are

No. 3—The blurring of the hands in this illustration is due to the trembling which is caused by the intense effort which is being made. The model well shows the powerful contraction of the muscles as far down as the waist. The beautiful modeling of the shoulder muscle, the deltoid, and of the muscles of the back which move the scapula, or shoulder blade, are rarely exhibited as finely as in this cut.

secured in this way; but to get the biggest development in the most rapid way, the muscles should be contracted *to the full extent of their ability* every time. A few contractions that are just as strong as a man can make, will count more in the development of size and also of strength than a very large number of contractions of a moderate kind. Everyone uses his hands a great deal, and yet the forearm does not grow large and strong. The reason is that a great deal of long continued moderate use does not develop the muscles as much in size as a few exercises of the intense kind.

It is a common experience for people working all the winter in a gymnasium, working faithfully for an hour three times a week, to expect they will have increased their measurements very much; they are frequently disappointed to find that their measurements have remained about the same. It is true, the muscles are harder than they were before, they sleep and digest their food better than before, but they had expected a big gain in size of the arms, chest and body muscles. The trouble in all these cases is that they do not take the kind of exercise that is adapted to

No. 4—In this exercise, the muscles of the front of the body, particularly the abdomen, are being contracted vigorously. Every one who does this exercise vigorously, should do twice as many in which the muscles of the back are contracted; the over-development of the muscles of the front of the body tends to make the individual round shouldered and flat chested.

building up muscular size; they took the exercise that is adapted to building up health. It is not at all true that there is any one kind of exercise that will accomplish all the known results to be obtained from exercise, any more that it is true that there is any one medicine which will accomplish all the results to be expected of medicine. One may exercise in order to become graceful in walking and moving about; one may exercise in order to become skillful in fencing, boxing, base ball or athletics; one may exercise in order to reduce fat; exercise may be taken in order to increase the activity of sluggish liver, and so on; but in each case if the results are to be secured, exercise must be adapted to the particular objects in mind. Thus, there is no such thing as a best exercise or as best exercises. The object of the exercises described in this article, is to increase the size and strength of the muscles. There is no attempt to increase their endurance or the skill with which one can use them.

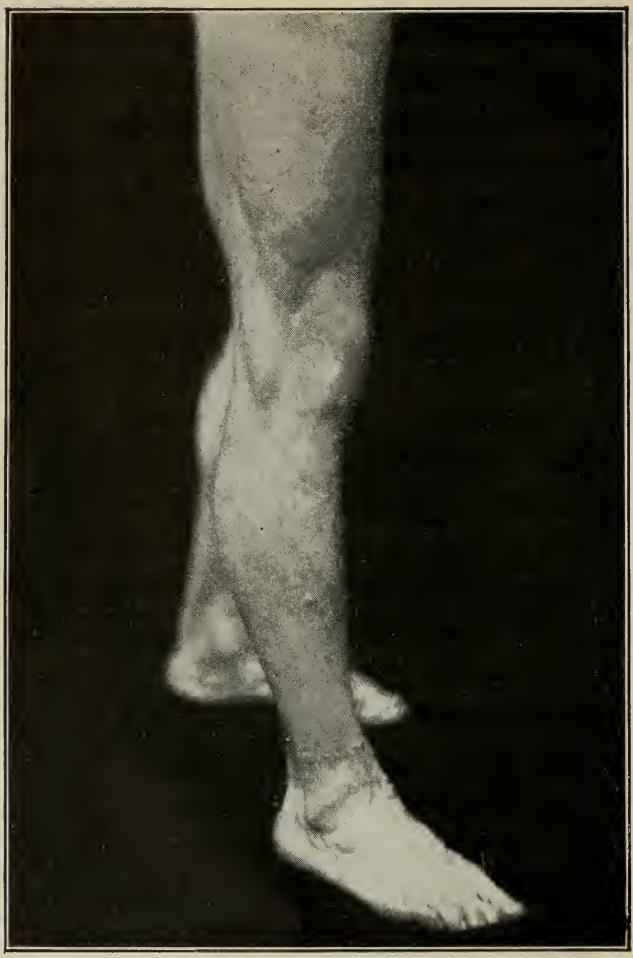
These exercises do not directly aim to increase the health of the body, although this usually follows to some extent.

No. 5—In this photograph the action of the triceps or large muscle on the back of the arm is well shown. When the biceps is contracted hard, this muscle can be contracted and thus balance the effort of the triceps.

The fundamental principle is that from the muscles shall be demanded as great power as possible; a hundred movements of a light character will not build up muscle as rapidly as five movements of great effort. This is a general principle and applies to all the muscles of the body.

One of the old statements of the evolutionists is that "function makes structure"—this is one of the great guides in physical training. The kind of exercise that demands a given structure will in general, if persisted in, give that structure. For example: to pound with a hammer all day does not demand big muscles, so that the result of the exercise is to secure endurance rather than size and strength; on the other hand, to put up a hundred-pound bell does not demand endurance, but size and strength; so the result of putting up a hundred-pound bell is increase of size and strength. In the gymnasium one rarely pulls to the full extent of his power, because he cannot tell exactly how much weight he can lift, nor are the pulley weights adapted to heavy weights.

The plan here described is to have the muscles pull against each other. Thus it is easy to have them work



No. 6—An illustration of the front of the thigh showing how the muscle comes down and terminates abruptly.

to their utmost capacity without straining them; for example: in illustration No. 7 the model is using the muscles that clinch his hand as hard as possible, and at the same time is contracting the muscles that open his hand; the result is that the hand stays half way open, the fingers are rigidly fixed, the tendons of the wrist are prominent, the fore-arm is hard. This exercise repeated fifteen to twenty times in the morning, the same number of times at night, and a few times occasionally as a man is walking along the street by day, will do more to increase the size of the muscles of the forearm than all the hand-shaking, hand-writing, handling knife and fork, etc., that a man will do all day. And more than this, a carpenter who is handling tools eight hours a day will not develop so big or so strong a forearm as will the man who takes this method. The long continued exercise with the hammer, saw and plane does not produce as strong contraction, and hence does not build up as large tissues, as this intense work that is done through the antagonistic muscles.

You will notice when you do this exercise as hard as possible, that the fingers and even the whole fore-

No. 7—In this picture every muscle of the arm is being worked, each so balanced against the other, that there is no movement, only a general trembling.

arm will shake with the intensity of the effort. This is the reason for the term *vibratory*. The position should be held under extreme contraction about three seconds, then the muscles should be allowed to become soft and the hand should be dropped. In about three seconds more the exercise should be repeated. The tendency will be not to work sufficiently hard at first. Every ounce of power that you have must be put into it, if you are going to gain more power. It is only by the investment of what you have, that you will gain more. Nature gives only what is necessary—if you make a demand upon your muscles for more power than you have, nature will gradually give it to you; but if you do not use what you have to the fullest extent, you will not be given much increase.

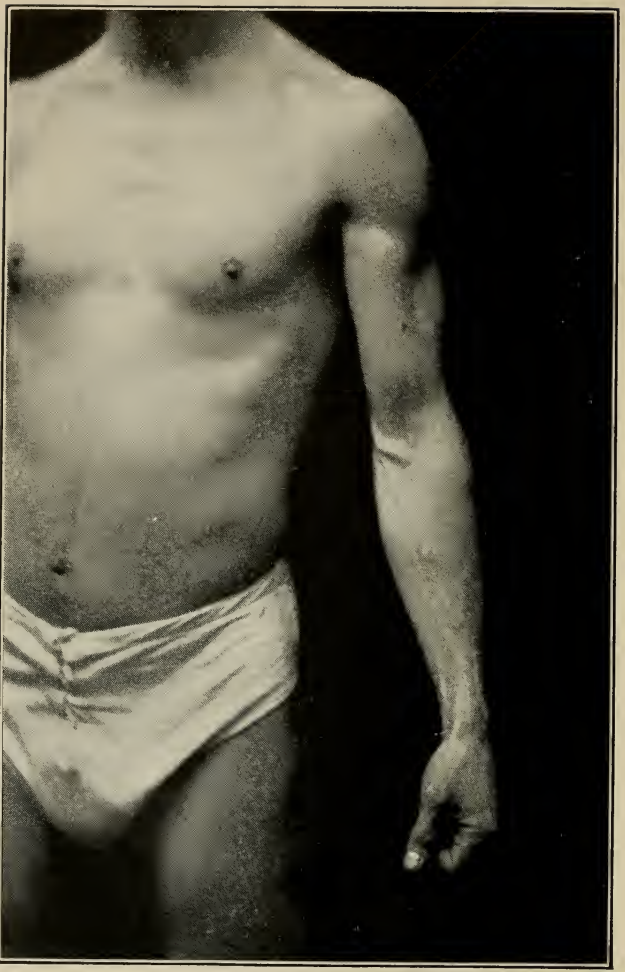
A few moments ago, I said that each exercise should not be continued for more than three seconds, and that then the muscles should be relaxed. The reason for this is that the circulation may be helped. When a muscle becomes hard by vigorous contraction, it tends to force out all the blood and lymph that is in it. New blood enters in under greater difficulties than under normal conditions; for this reason the

No. 8—Holding a wad of paper in the hand and squeezing it with all one's power for two or three seconds, is an excellent method for developing the whole arm. Its effect is well shown in the picture.

exercise should not be long in duration. The muscles should be allowed to become soft again. In order to favor its accomplishment a number of vigorous exercises rather short in duration should be taken.

One common way of exercising the forearm is to put something in the palm and grip it, a rubber ball, a piece of wood, or even a wad of paper. (Cut Nos. 1 and 8). The trouble with this exercise is two-fold; first, it develops only one set of muscles, the flexors, and the muscles that extend the fingers are left undeveloped; secondly, as a result of the development of the flexing muscles, and the non-development of the extensors, the hand when not in use tends to hang with the fingers almost closed into the palm (No. 9). The strong muscles have overbalanced the weak ones so that the hand is held nearly shut. By the method that I have proposed, flexors and extensors are developed together, and no matter how strong the forearm becomes, the hand and fingers will hang in a normal position.

The question may naturally be asked as to why I have said that gripping with the hand or exercising in some other way the muscles of the forearm with the greatest vigor will result in developing the muscles



No. 9—A person who continues an exercise which developes the hand too much will soon acquire a hand which hangs, as is shown in the accompanying illustration; this is ungraceful and clumsy.

of the upper arm and the chest. The reason is this: the muscles which close the hand are, some of them, attached to the forearm, thus the tendons have to pass through the wrist. In order that they may work efficiently it is necessary that the wrist be held rigid. You cannot possibly clinch your hand hard and have the wrist free of movement. Now, in order to have the wrist held in a rigid position, all the muscles running from it up to the forearm (and some of them run to the lower part of the upper arm), must be contracted with great vigor. The elbow joint must also be held rigid, for the muscles which attach to the upper arm could not act efficiently were their points of origin movable, so it is necessary for the muscles which control the elbow to be contracted vigorously. These muscles, some of them, go up and attach to the shoulder blade and clavicle. So the muscles which hold the shoulder must be fixed in order that the big muscles of the chest and back may have solid support. The ribs have to be fixed solidly. In order to fix the ribs solidly we have to stop breathing. When a person takes hold of anything with the hand and squeezes it as hard as possible, he holds his breath.

No. 10--If the muscles are pressed deeply after the exercise, it will benefit them.

If this exercise is tried in front of a looking-glass one will see that gripping can be done to a moderate extent without contracting the muscles of the upper arm. So that when one squeezes as hard as possible, practically all the muscles of the arm and body are involved. This is the reason why squeezing of the hand as hard as possible will result in the development of the arm and shoulder as well. (Nos. 1 and 8.)

I have explained this exercise somewhat fully, as it is a type of all the others. All the exercises that are mentioned are exercises in which one group of muscles is pitted against its natural opponent, so that both are exercised to their fullest extent. You will find that to contract these muscles of the forearm as intensely as possible will involve the stiffening of the whole arm, and, indeed, of the upper part of the body. Always put your attention upon the particular part where you wish the chief effect. You will find, also, that you cannot contract these muscles with the greatest power without holding the breath; accordingly, before beginning the exercise it is well to take half a dozen breaths just as deep as you can; first blow out all the air possible from the chest and

No. 11—After the various muscles have been gone over as in the preceding illustration, the muscles should be slapped; this effort gives a stimulating effect which has most excellent results. One should slap all the muscles of the body; the model is merely slapping his arms.

then inhale to the fullest extent. Repeat this three or four times and then begin. If this deep breathing makes you a little dizzy the first few days, it shows that you need the exercise very much. The dizziness is to be overcome simply by persistence. Take deep breaths just up to the point where you begin to feel dizzy and then stop. It will not be many days before you can do all the deep breathing that you want to without feeling dizzy.

Having done the preliminary deep breathing take a deep breath and hold it while you do the first exercise, which consists of contracting the fingers of the hand for three seconds. Then let the breath go, and also let the fingers relax; take another deep breath and contract the hand muscles again. Repeat this ten times. The whole exercise ought to take one minute. Then with the right hand, squeeze the muscles of the left arm from the wrist to the elbow quickly; with the left hand similarly treat the right arm. Then slap the left arm from the wrist to the elbow. Follow this with similar treatment of the right. (See cuts 10 and 11.)

You are now ready for the second exercise, which

No. 12—This illustration was taken immediately following the preceding; the only difference in the two being, that in this case the palm is facing the shoulder, while in the other case the palm is away from the shoulder. The far greater contraction of the biceps with the palm toward the shoulder is already shown. When this muscle is being measured, it should always be contracted in this way, for otherwise it will appear to be much smaller than it really is.

is to exercise and develop the upper arm. The hand is to be placed in a similar position to that which was taken when the muscles of the forearm were to be exercised. But now the attention is to be fixed upon the biceps, the large muscle which shows on the front of the upper arm. It is to be contracted against the triceps, the muscles on the back of the arm, as hard as is possible. The biceps is well shown in Nos. 12 and 13. Some also show the contraction of the hand occurring at the same time. In the model (No. 5), the biceps are being strained against the muscles on the back of the arm. The same preliminary deep breathing should be taken in this case, and indeed in every case. The exercise should be repeated ten times as before. There is little use in doing the exercise unless one is going to put into it all the effort possible.

In some of the pictures that are shown, the outlines of the hand are a trifle blurred; the reason for this is that in spite of the most rapid exposure that it was possible to make indoors, with a specially prepared camera, it was impossible not to show the vibration of the hands under the intense effort that

No. 13—The little bunch near the elbow well shows the small muscles which turn the palm toward the shoulder. It also shows in excellent form the construction of the biceps in the forward part of the arm and of the triceps on the back of the arm pulling against the biceps.

was being made by the model. Illustrations Nos. 5 and 7 show the triceps on the back of the upper arm as it is pulling against the biceps.

The next part of the body to be exercised is the shoulder. This is best done at the same time that the upper back is being developed. Illustrations Nos. 3 and 15 show these muscles in most vigorous contraction. The muscle on top of the shoulder, the deltoid, and the great surface muscle of the upper back are pulling the shoulder up and lifting the arm; while the great muscles of the chest are pulling the arm forward, and the other fibres of the trapezius are pulling the shoulder back and down. The result is that the shoulders and arms are set as if in iron. These great masses of muscles, pulling with all their inherent force, bind the joints together with the greatest solidity. The illustrations show well the contraction of these muscles. The extent to which this contraction is carried on over other joints is well shown. The double line of muscle extending half way down the middle of the back shows two muscles which pull the shoulder together; their development is well shown in No. 3. The tremendous sweep of the great band of muscle coming from

No. 14—In this picture is shown, how in extreme effort, the small muscles which lift the toes, are exceedingly active. The tendons on the back of the foot which stand out, are being pulled with great vigor.

the lower back, winding over the edge of the scapula, and then forward and upward to the upper arm, is superbly shown. This is the latissimus dorsi, the most powerful muscle that we have, by which we pull the arms down to the sides. This is effective in "chinning" one's self.

Taking a full breath, place yourself in this position as rigidly as possible for two or three seconds, then relax, and take a second breath easily, then another full breath, and repeat the exercise; pull the muscles with the utmost power that you possess. You will find it necessary to stiffen the neck and hold it well back. Remember that the shape of the body when it is being exercised vigorously is the shape that it tends to take during rest; so always exercise in positions that are strong and erect. Some of the illustrations show the contractions of the muscles on the front part of the body. These are given as type-forms rather than as the most desirable of positions for much exercise. *Exercises in which the back and neck are held rigidly erect, tend toward better carriage and should be taken about twice as frequently as exercises that pull the body forward.*

No. 15—Exercise of the muscles of the upper extremities and of the upper part of the body. The shading of color about the edge of the shoulder blade is the remains of a Summer's tan rather than the difference in muscle.

Illustration No. 16 shows well the exercise of the thigh. The great muscles that extend the legs are being contracted with the greatest vigor so that they stand out in massive folds. Most men walk quite a little; the result is that the average man has better legs than he has arms. These muscles are fully developed in many men, who otherwise are pretty flabby. It is well to bend the knee, hip and ankle joints a little. Then slowly contract the muscles to your utmost power until they stand out under the skin like piles of coiled rope, or like steel bands under the pressure of intense strain. After contracting the muscles of one thigh ten times, contract the muscles of the other thigh, similarly and an equal number of times.

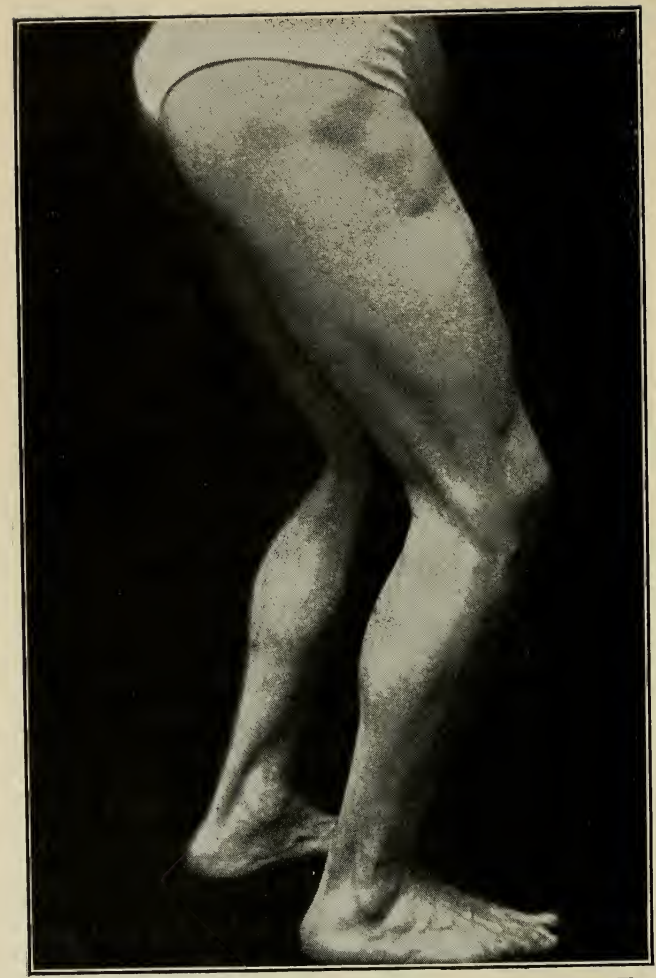
Illustration No. 17 shows well the contraction of the great muscles which flex the leg on the thigh. These muscles do not show particularly well in ordinary use. The exercise should be carried out on both sides of the body. Nos. 3 and 19 show the great muscles of the lower back in active contraction: also show how the muscles of the forearm, upper arm and shoulder are working at the same time. The

No. 16—This illustration is to show the contraction of the "quadriceps extensor femoris," which is the large muscle at the front of the thigh, immediately above the knee. It shades off into a heavy flat tendon, which includes the knee cap. In the model the shadows to the left show where the belly of the muscle is shading off into the tendon. This muscle straightens the leg every time one raises up from having stooped to the floor. The straightening of the knee is accomplished by means of this muscle. It is one of the strongest muscles of the body.

fine lines running outward and downward from the spinal column show the intensity of the effort that is being made. The distended veins on the forearm are also indications of a similar character. This exercise should be carried on as are the others.

Illustrations Nos. 3 and 19 show exercises which are designed to be general—a large fraction of all the muscles of the body are working at once. In No. 18 the superficial muscle of the neck is shown in its great activity.

There is one danger to which these general exercises are exposed, that is, when so many muscles are used at once in such a vigorous way, the blood pressure of the body is increased with great rapidity. If the exercises are done excessively, the heart will be made irritable and sometimes over-developed. I have known a number of persons who, seeing the good effects of these exercises, have concluded that if the amount prescribed in these exercises would be good, twice as much would be twice as good, and have overdone the matter seriously. My father was once prescribing for an Hawaiian chief to whom he gave some pills, with instructions to take one three times

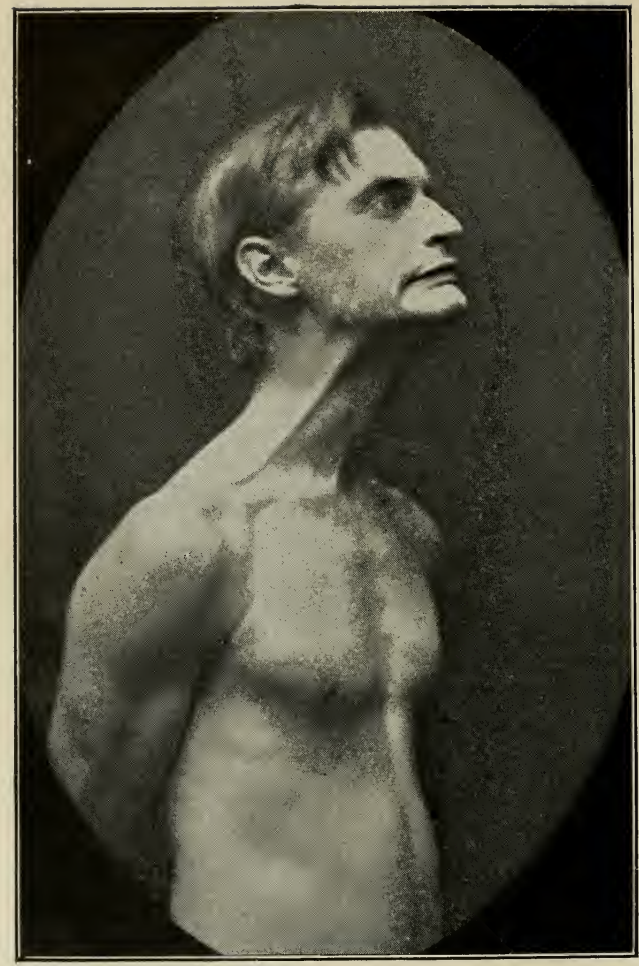


No. 17—The great muscles of the thigh are here admirably shown. The muscles which extend the thigh being on the front, and those which flex it being on the back. The knotted character of these muscles is well shown.

a day. He was so much benefited by the first that he concluded to take the whole box the following morning. His life was saved with great difficulty.

Another general caution in the use of these exercises needs to be given, and that is that beneficial effects are not usually secured by those who have completely passed the growing period. I should never encourage a man of over fifty to expect to profit by such exercises, and a man over forty should expect less than the young man may. Big girth of mucle is to be secured with advantage only during years when the body is at its maximum of efficiency.

Before undertaking to carry out this system of exercises, several things should be done. First determine how long it will be carried out; plan perhaps for one month, or at any rate, some definite period, otherwise one's resolution is apt to weaken and one will gradually do less and less, thinking to continue it when it is easier and business is not so pressing. This is usually an absolute fallacy. Men stop and do not begin it again. The thing to do is to undertake a definite plan. One month is a good length of time to undertake. It is long enough to

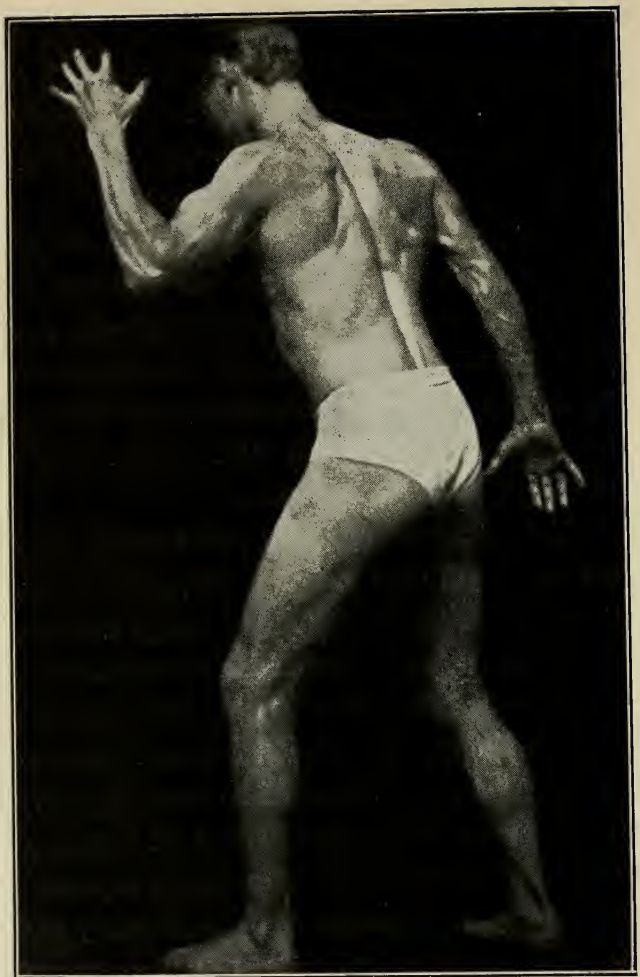


No. 18—Platysma myodies: This is a thin sheet of muscle which runs from the lower face down to the front of the body. Many animals have a corresponding muscle over most of the body. They can twitch their skin all over, just as we can twitch the skin of the neck. The skin of the chest can be pulled up nearly an inch, after one has become a little practised in the use of this muscle as a whole.

tax the will of most men; it is short enough to be within the ability of most men; it affords time enough to secure results which should be ample encouragement for continuation for another month.

Second, having settled the length of time that the programme will be followed out, next determine absolutely how much time each day, and at what time these exercises will be carried on. Ten minutes in the morning will do, but ten minutes in the morning and night will do more. It will be well to make a written record of one's purposes.

Third, measure the girth of your forearm, upper arms contracted (cuts Nos. 12 and 20), and straight, chest contracted and expanded, waist, thigh and neck. If you can get these measurements taken by someone who is familiar with such work, they will be accurate and satisfactory. You should have your measurements taken again at the end of the month in exactly the same way that they were taken at the beginning. They should, of course, be taken without any clothing on, that is, next to the skin, otherwise they will be quite unreliable. Arm should be as in No. 12 when measured, not No. 20.



No. 19—The model is throwing as many muscles of the body as he can into action at once. The straining of the muscles of the forearm, upper arm and shoulder, and also right leg, show peculiarly well. This is one of the type of exercises which if long persisted in, tend to produce irritated heart, as it throws so much work upon the heart suddenly.

Fourth, select two exercisers on which to work. At the end of the month take two others. Nos. 8 and 6 make a good combination on which to start.

After the exercise, particularly in the morning, it is well to dip a towel in cool water, cold if it is pleasant, and pass it rapidly over the whole body. This should be followed by vigorous rubbing with a coarse towel. Get a silk crash towel, or even an ordinary crash towel of good length, and after you have been dried by the bath towel, use this over your body and limbs with the same vigor and speed that the modern shoe polisher exhibits when doing his work, until the whole body glows and feels the way your shoes look.

No. 20—The large muscle of the upper arm or the biceps. This muscle not only bends the forearm upon the upper arm, it also twists the forearm so that the palm faces the shoulder. In this illustration, the palm is away from the shoulder; and while the muscle is contracted vigorously, still the length of the muscle is evident. When the muscle is being measured it should be held as in cut No. 12.

THE FINEST EQUIPPED GYMNASIUM IN THE WORLD

The progress made in the manufacture and the mechanical perfection of the various gymnastic appliances shown in the complete gymnasium installed by A. G. Spalding & Bros. at the World's Fair, demonstrated that the firm is alive to the imperative need of the times. Physical training is being rapidly advanced and in the congested sections of the country it is a growing problem how to provide for the new conditions. This is particularly true in public school work and similar institutions. Real estate in large cities is extremely valuable, and as a consequence, gymnasiums are often reduced in size and wholly inadequate to the growing needs. This means that the apparatus of the past of a fixed or cumbersome character must be superseded by appliances that may be rapidly and conveniently handled in a manner to accommodate the constantly increasing number of boys and girls needing systematic physical development.

A. G. Spalding & Bros., who outfitted the complete gymnasium at the World's Fair and received the Grand Prize and Gold Medal in competition for their exhibit, are to be congratulated on their enterprise.

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1 Suspended Horizontal Bar—to swing up—Special.
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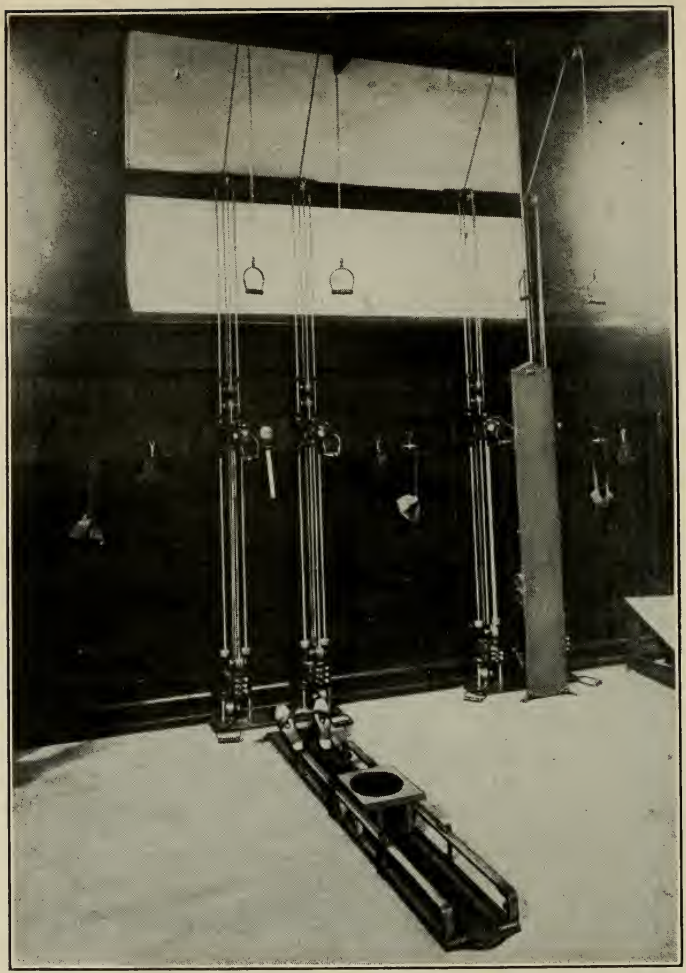
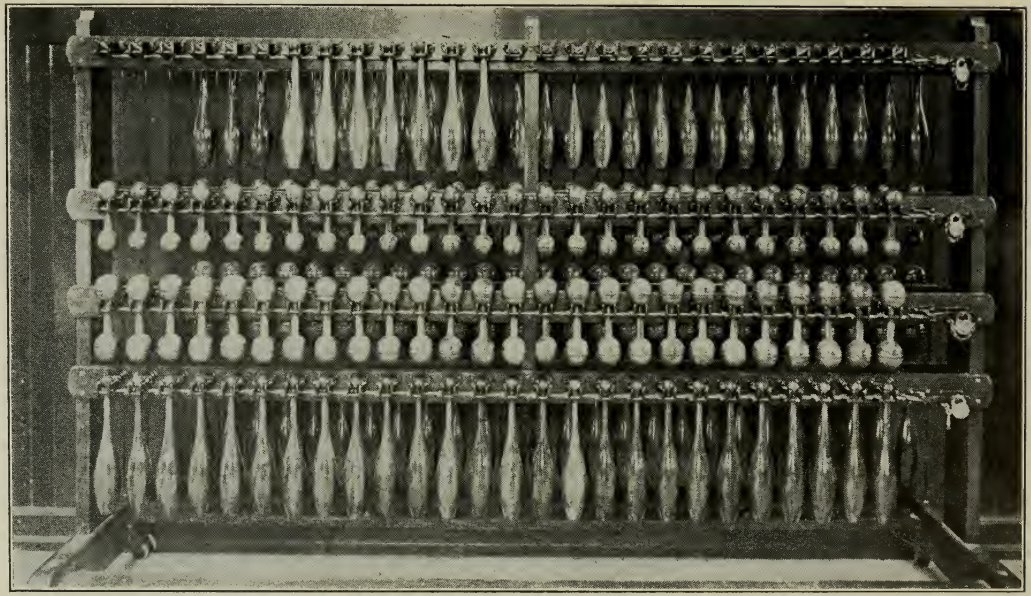
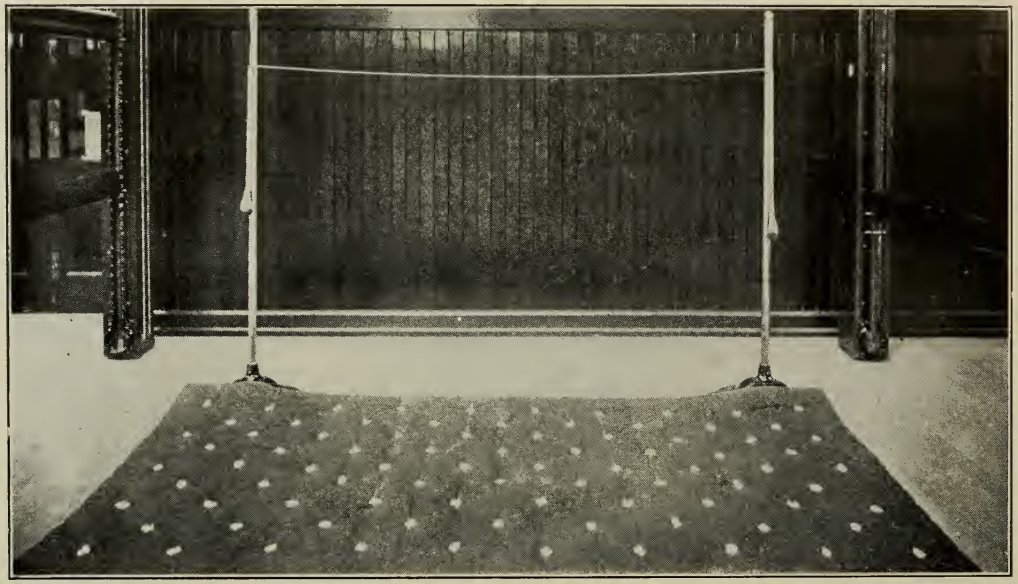
3 New Style Spalding Parallel Bars—Special.
3 No. 25 Jump Boards.
3 No. 0 Vaulting Horses.
3 Pairs Special Jump Stands.
3 Grasshopper Spring Boards.
3 No. 520 Storming Boards.
1 No. 207 Vaulting Box.
1 No. 28 Incline Board.
3 Pairs No. 125 Flying Rings.
8 No. 126 Traveling Rings.
12 No. 98 Climbing Ropes.
1 40-ft. Ladder and Braces.
1 Horizontal Window Ladder.
2 Vertical Window Ladders.
2 Striking Bag Discs and Bags.
11 5-ft. x 10-ft. x 2-in. Mats.
3 5-ft. x 6-ft. x 2-in. Mats.
3 3-ft. x 10-ft. x 2-in. Mats.
3 3-ft. x 5-ft. x 2-in. Mats.
1 Tumbling Mattress—5 ft. x 15 ft. x 8 in., curled hair.
2 Pairs Official Basket Ball Goals.
2 Pairs Official Screens for Basket Ball Goals.
2 No. M Official Basket Balls.
2 No. 1 Medicine Balls.
2 No. 2 Medicine Balls.
2 No. 3 Medicine Balls.
6 Medicine Ball Racks.
50 Pairs 1-2-lb. Model Dumb Bells.
50 Pairs 1-lb. Model Dumb Bells.
50 Pairs 1-lb. Indian Clubs.
50 Pairs 1 1-2-lb. Indian Clubs.
200 Pairs Club and Bell Hangers, on stands.
4 Dozen Wands.
4 Dozen. Bar Bells.
2 Wand Racks.
4 Dozen Savage Bar Bells.
8 Dozen Hangers for Bar Bells.
20 Head Gears.
20 Foot Gears.
1 Set Ring Hockey.
2 Sets Rope Quoits.
50 Bean Bags and Cabinet.
2 Sets Shuffleboard.
50 Rubber Balls and Cabinet.
4 8-ft. Jump Ropes.
4 20-ft. Jump Ropes.
1 Volley Ball Outfit.
4 Jump Frames.
50 Nickel Wands.
1 Wand Cabinet mounted on rollers for nickeled wands.
1 Game Cabinet.
50 Grace Hoops.
2 Grace Hoop Racks.
1 Pair Physician's Scales.
1 Stadiometer. [eter.
1 Chest, Back and Loin Dynamom-
1 Chinning Bar.
1 Pair Wall Parallels.
1 Chin Gauge.
1 Wet Spirometer.
1 Dozen Glass Mouth Pieces.
1 Pair Chest Calipers.
1 Pair Shoulder Calipers.
1 Spirometer—shelf.
1 Dynamometer for Grip.



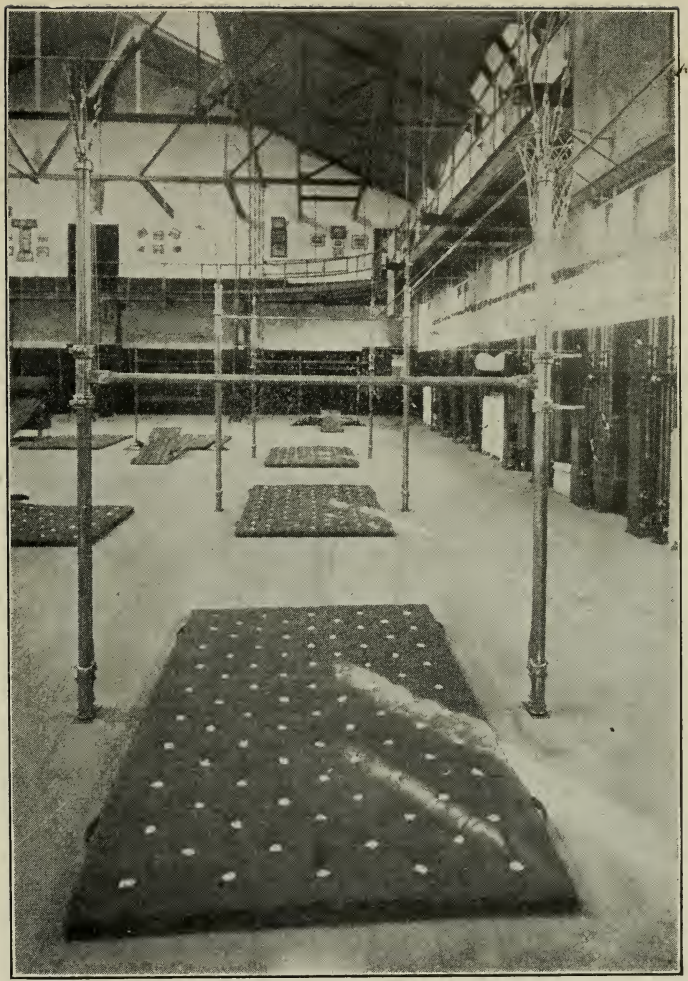
CUT No. 1—The above is a combination piece of wall apparatus which may be used as a rowing weight, back and loin pulley, direct chest pulley with upright backboard, or intercostal overhead pulleys. Either set of handles is always ready for use, and requires no adjustment.



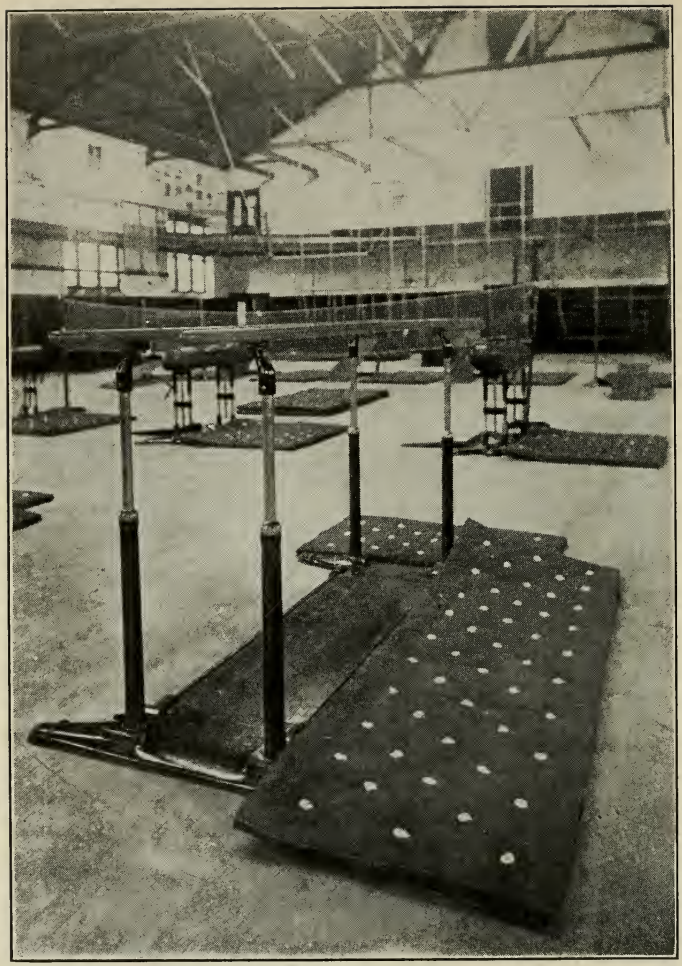
CUT No. 2—A portable Indian club and dumb bell rack, made of oak, mounted on rubber-tired wheels. The particular feature about it is the locking device, whereby an entire row of Indian clubs or dumb bells may be locked or unlocked with one throw of the lever, the object of the device being to place the control of the apparatus entirely in the hands of the instructor. The character of the hanger is decidedly unique and practical and is original with A. G. Spalding & Bros.



CUT No. 3—A new style of jumping standard that was favorably commented on by all who saw it. It is elaborately made of polished brass tubing and brass fittings, having a heavy iron round base. The particular feature of its construction was the automatic pin arrangement which was permanently attached to the standard and was instantly adjusted, locking itself when released at the desired height.



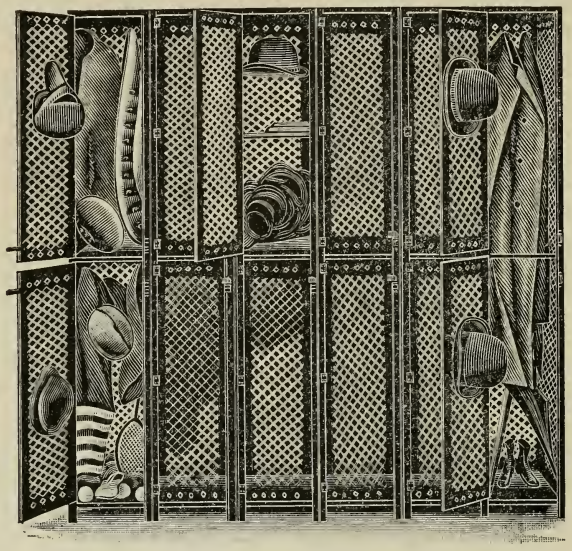
CUT NO. 4—Shows a combined horizontal and vaulting bar of entirely new construction. The bars are suspended by overhead guys and these guys are tightened and the bar drawn into position at the floor by the use of one lever on each upright. The principle is radically new, and is certainly most successfully applied. The bar requires only two floor plates and two points of attachment at the floor, eliminating the spread of guys, thereby saving floor space and greatly facilitating the handling of the apparatus in clearing the floor for other work.



CUT No. 5—Illustrates a pair of parallel bars, the design of which was particularly commended by the entire body of Turn Verein representatives who used them in the Olympic gymnastic contests.

Cut No. 6—A photograph from one end of the gymnasium showing considerable of the apparatus in place on the floor. The net in the centre of the room is for volley ball games. Owing to the character of the apparatus the floor may be quickly cleared for games of this character at short notice.

DURAND LOCKERS



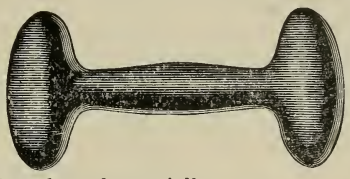
WERE USED EXCLUSIVELY IN THE GYMNASIUM OF THE PHYSICAL CULTURE DEPARTMENT AT THE WORLD'S FAIR AND RECEIVED THE

GRAND PRIZE

FOR BEING THE BEST, MOST COMPLETE AND SERVICEABLE LOCKER MADE

DURAND LOCKER CO. ... ... Chicago, Ill.

IRON DUMB BELLS



Made on approved models, nicely balanced and finished in black enamel. Sizes, 2 to 40 lbs. Per lb., **6c.**

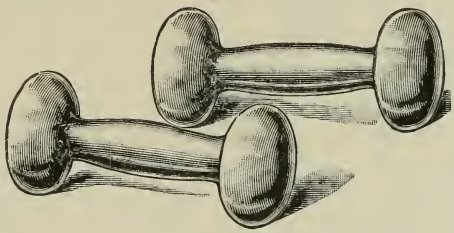
Over 40 lbs., **8c.** per lb.

Bar Bells, any weight, with wrought iron handle, any length made specially. . . . . Per lb., **10c.**

NICKEL-PLATED DUMB BELLS

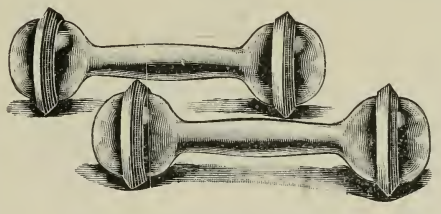
Nickel-plated and polished.

No.		Per Pair
1N.	1 lb.,	$ .25
2N.	2 "	.50
3N.	3 "	.65
4N.	4 "	.75
5N.	5 "	1.00



NICKEL-PLATED DUMB BELLS

WITH RUBBER BANDS



Nickel-plated and polished.

No.		Per Pair
1B.	1 lb.,	$ .65
2B.	2 "	.75
3B.	3 "	1.00
4B.	4 "	1.15
5B.	5 "	1.25

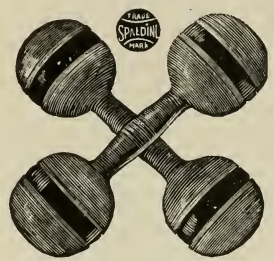
Handsomely illustrated catalogue mailed free to any address.

A. G. SPALDING & BROS.

New York, Chicago, Philadelphia, San Francisco
St. Louis, Boston, Buffalo, Baltimore
Denver, Minneapolis, Kansas City, Montreal, Can.
London, England

Spalding's
Trade-Mark Wood Dumb Bells

Our Trade-Mark Bells are made of selected material, neatly decorated, well finished and of perfect balance.

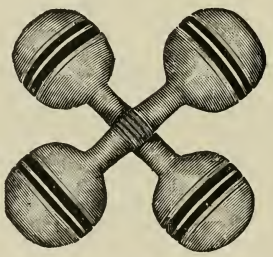


1-4	pound.	Per pair, $	.40
1-2	pound.	"	.40
3-4	pound.	"	.45
1	pound.	"	.50
1 1-2	pound.	"	.55
2	pound.	"	.65
3	pound.	"	.90
4	pound.	"	1.10

Trade Line Wood Dumb Bells

NOT TRADE-MARK QUALITY

1-4	pound.	Per pair,	25c.
1-2	pound.	"	25c.
3-4	pound.	"	30c.
1	pound.	"	35c.
1 1-2	pound.	"	40c.
2	pound.	"	45c.
3	pound.	"	55c.
4	pound.	"	70c.



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Spalding's Trade-Mark Indian Clubs

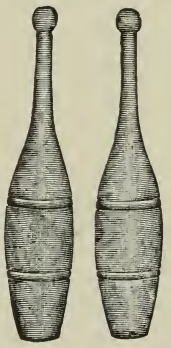
Our Trade-Mark Indian Clubs are of selected material and perfect in shape. They are finely polished, with ebonite centre band and gilt stripe top and bottom. Each pair wrapped in paper bag.

1-2 pound	Per pair, $	.40
3-4 pound	"	.45
1 pound	"	.50
1 1-2 pound	"	.55
2 pound	"	.65
2 1-2 pound	"	.80
3 pound	"	.90
4 pound	"	1.10
5 pound	"	1.40

Trade Line Indian Clubs

The following clubs are not Trade-Mark goods, but of good material and far superior in shape and finish to the ordinary clubs on the market.

1-2 pound	Per pair,	25c.
3-4 pound	"	30c.
1 pound	"	35c.
1 1-2 pound	"	40c.
2 pound	"	45c.
2 1-2 pound	"	50c.
3 pound	"	55c.
4 pound	"	70c.
5 pound	"	90c.



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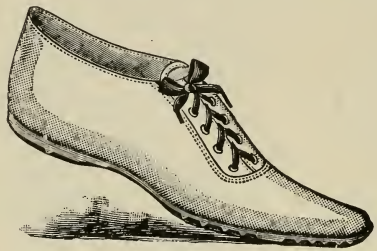
Buffalo	Philadelphia	Denver	Pittsburg	London, England

Special Award and Grand Prize

were won by A. G. SPALDING & BROS. at the Louisiana Purchase Exposition, 1904, for the best, most complete and most attractive installation of Gymnastic Apparatus and Athletic Supplies shown at the World's Fair.

Spalding Gymnasium Shoes

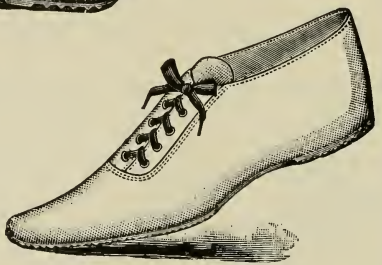


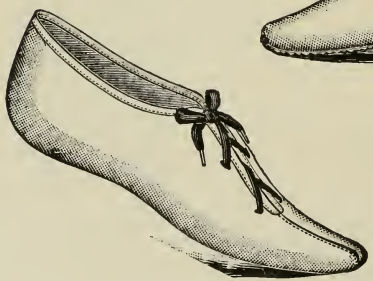
Low cut, best grade canvas shoe; white rubber sole; in ladies' and men's sizes; men's made of white canvas, ladies' black.

No. 1. Pair, $1.25

Low cut canvas shoe, with rubber sole.

No. K. Pair, 75c.





Low cut canvas, canvas sole; very popular for gymnasium.

No. E. Pair, 35c.

A. G. SPALDING & BROS.

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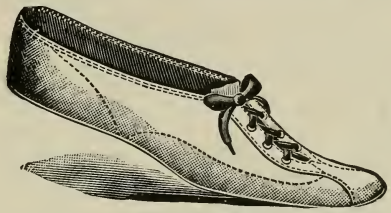
Spalding Gymnasium Shoes



Selected leather, electric sole. A very easy and flexible shoe.

No. **20.** Low Cut. Per pair, **$1.50**
No. **21.** High Cut. " **1.75**

Low cut shoe, selected leather, extra light and elkskin sole; in ladies' and men's sizes.

No. **166.** Per pair, **$2.50**

A. G. SPALDING & BROS.

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Spalding Gymnasium Shoes

Horsehide sole; soft and flexible; in ladies' and men's sizes.

No. 155. Pair, $3.50

Kangaroo; elkskin sole, extra light, hand made.

No. 15. Pair, $4.00

High cut, best grade canvas shoe, white rubber sole; in ladies' and men's sizes; men's made of white canvas, ladies' black.

No. 1H. Pair, $1.50

High cut canvas shoe, rubber sole.

No. M. Pair, $1.00

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BASKET BALL SHOE

Made of selected leather with special rubber sole. The suction caused by the peculiar construction of the sole enables the player to obtain a good purchase on the floor, a feature that should make this shoe very popular with basket ball players.

No. BB. Per pair, **4.00**

For ladies; otherwise same as No. BB.

No. BBL. Per pair, **$3.50**

A. G. SPALDING & BROS.

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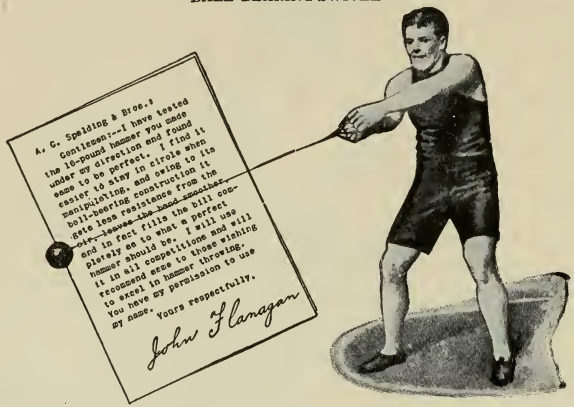
Spalding Championship Hammer

BALL-BEARING SWIVEL


A. G. Spalding & Bros.:
Gentlemen:—I have tested the 16-pound hammer you made under my direction and found it to be perfect. I find it easier to stay in circle when going to its construction is manipulating. ball-bearing resistance from the part because the head sometimes—less and in fact fills the bill completely as to what a perfect hammer should be. I will use it in all competitions and will recommend same to those wishing to excel in hammer throwing. You have my permission to use my name. Yours respectfully,
John Flanagan

THE SPALDING CHAMPIONSHIP BALL-BEARING HAMMER. Originally designed by John Flanagan, the champion of the world, has been highly endorsed only after repeated trials in championship events. The benefits of the ball-bearing construction will be quickly appreciated by all hammer throwers. Each hammer put up complete in sole leather carrying case.

No. 02.	12-lb., with sole leather case.	$12.00
No. 06.	16-lb., with sole leather case.	12.00
No. 02X.	12-lb., without sole leather case.	10.00
No. 06X.	16-lb., without sole leather case.	10.00

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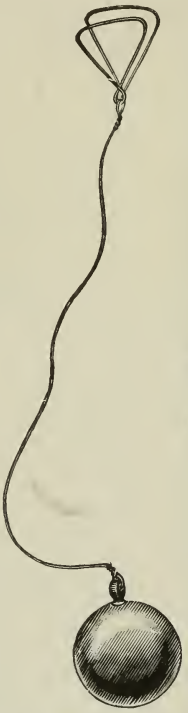
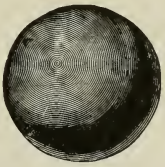
Spalding's New Regulation Hammer With Wire Handle

	Lead	EACH
No. 9.	12-lb., Lead, Practice,	$4.25
No. 10.	16-lb., Lead, Regulation,	4.50
	Iron	EACH
No. 12.	8-lb., Iron, Juvenile,	$2.50
No. 14.	12-lb., Iron, Practice,	3.00
No. 15.	16-lb., Iron, Regulation,	3.25
	Extra Wire Handles	EACH
No. 6H.	For above hammers,	50c.



Shot



No. 19.	16-lb., Lead.	Each, $2.50
No. 21.	12-lb., Lead.	" 2.25
No. 23.	16-lb., Iron.	" 1.75
No. 25.	12-lb., Iron.	" 1.50
No. 18.	8-lb., Iron.	" 1.25

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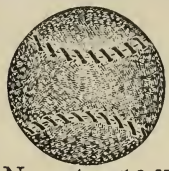


Indoor Shot

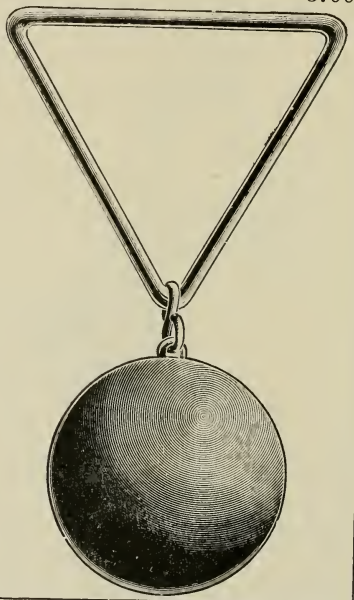
With our improved leather cover. Does not lose weight even when used constantly.

No. 3. 12-lb. Indoor Shot. Each, $7.00
No. 4. 16-lb. Indoor Shot. . . " 7.50
No. 26. 8-lb. Indoor Shot. . . " 5.00

Regulation 56-lb. Weights

Made after model submitted by Champion J. S. Mitchel, and endorsed by all weight throwers. Packed in box and guaranteed correct in weight and in exact accordance with rules of A. A. U.

No. 2
Lead 56-lb. Weights
Complete, $8.50



A. G. SPALDING & BROS.

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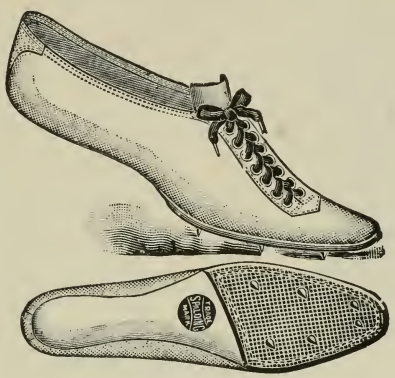
SPECIAL AWARD AND GRAND PRIZE

were won by A. G. SPALDING & BROS. at the Louisiana Purchase Exposition, 1904, for the best, most complete and most attractive installation of Gymnastic Apparatus and Athletic Supplies shown at the World's fair.

INDOOR RUNNING SHOES

Made With or Without Spikes.



Fine leather, rubber tipped sole, with spikes.
No. 111. Per pair, $3.50

Leather shoe, rubber tipped, with spikes.
No. 112. Per pair, $3.00

Leather shoe, rubber tipped, no spikes.
No. 114. Per pair, $2.50

INDOOR JUMPING SHOES

Best leather Indoor Jumping Shoe, hand-made, rubber soles.
No. 210. Per pair, $5.00

A. G. SPALDING & BROS.

New York, Boston, Buffalo, Chicago, Philadelphia, Cincinnati, Minneapolis, St. Louis, Baltimore, Denver, Montreal, Can., Washington, Kansas City, Pittsburg, San Francisco, New Orleans, Syracuse, London, England

SPECIAL AWARD AND GRAND PRIZE

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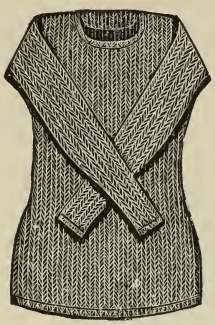
Full Sleeve Shirts



Best Worsted, full fashioned, stock colors and sizes.

No. 1D. Each, $3.75

Cut Worsted, stock colors and sizes.

No. 602. Each, $1.75

Cotton, Flesh, White and Black.

No. 3D. Each, $1.00

Knee Tights

Best Worsted, full fashioned, stock colors and sizes.

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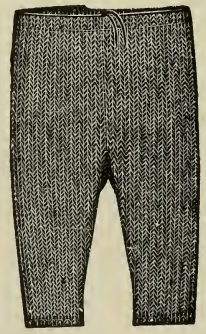

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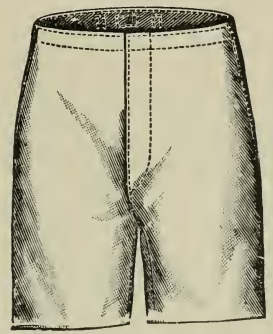

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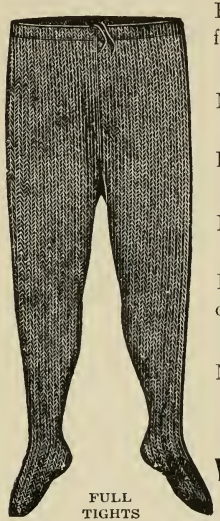

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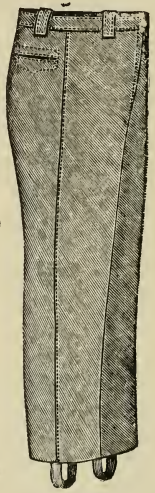

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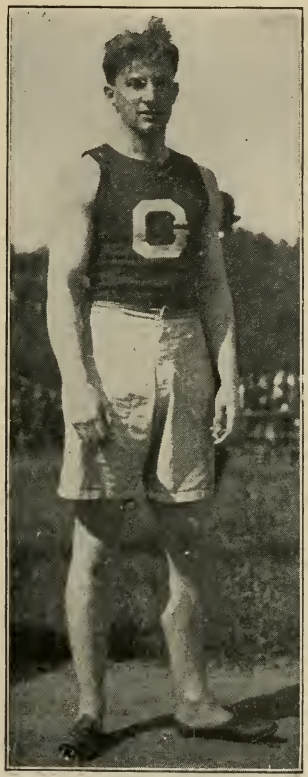

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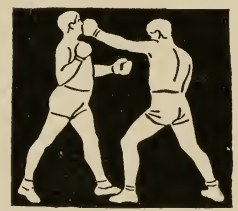

For many years books have been issued on the art of boxing, but it has remained for us to arrange a book which we think is sure to fill all demands. It contains over 70 pages of illustrations showing all the latest blows, posed especially for this book under the supervision of one of the best instructors of boxing in the United States, who makes a specialty of teaching and who knows how to impart his knowledge. They are so arranged that anyone can easily become a proficient boxer. The book also contains pictures of all the well-known boxers. A partial list of the 200 pages of the book include: A history of boxing; how to box; the correct position; the hands; clenching the fist; the art of gauging distance; the first principles of hitting; the elements of defence; feinting; knockout blows; the chin punch; the blow under the ear; the famous solar plexus knockout; the heart blow; famous blows and their originators; Fitzsimmons' contribution; the McCoy corkscrew; the kidney punch; the liver punch; the science of boxing; proper position of hand and arm; left hook to face; hook to the jaw; how to deliver the solar plexus; correct delivery of a right uppercut; blocking a right swing and sending a right uppercut to chin; blocking a left swing and sending a left uppercut to chin; the side step; hints on training, diet and breathing; how to train; rules for boxing.

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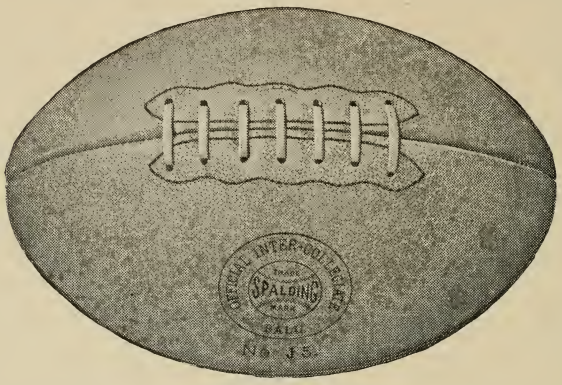

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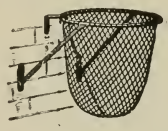

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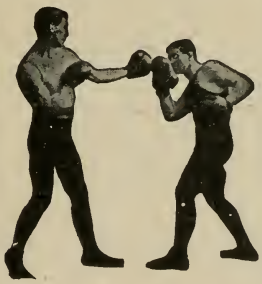

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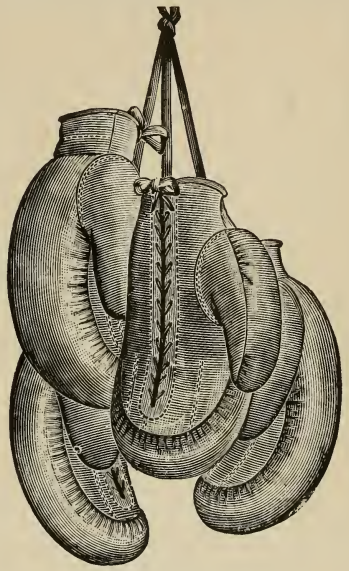

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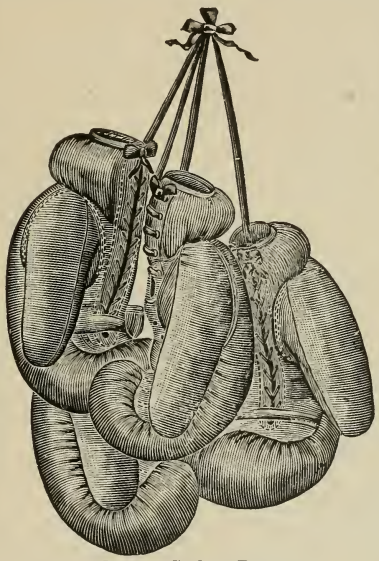

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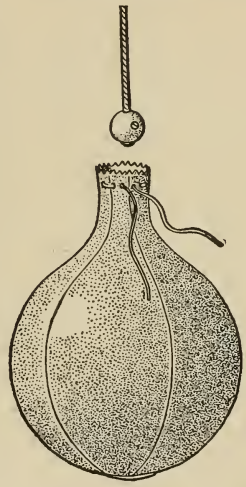

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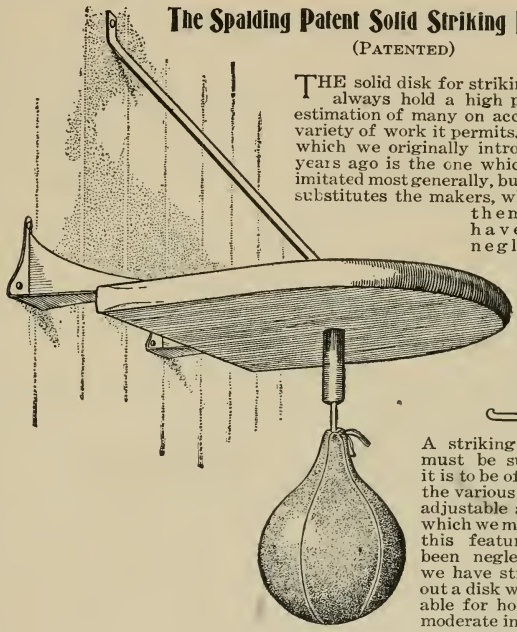

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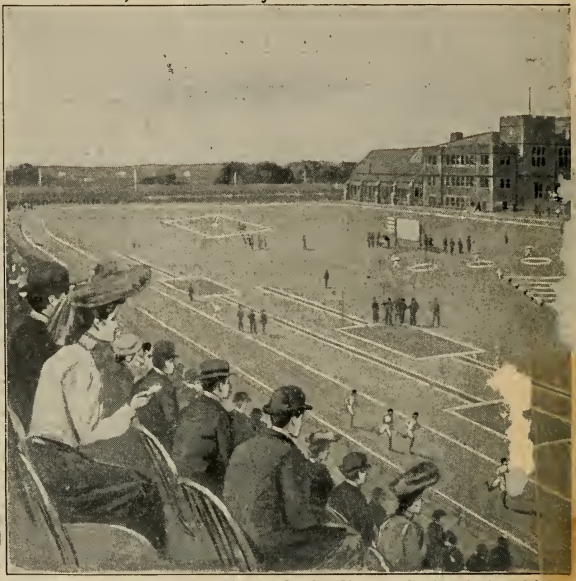
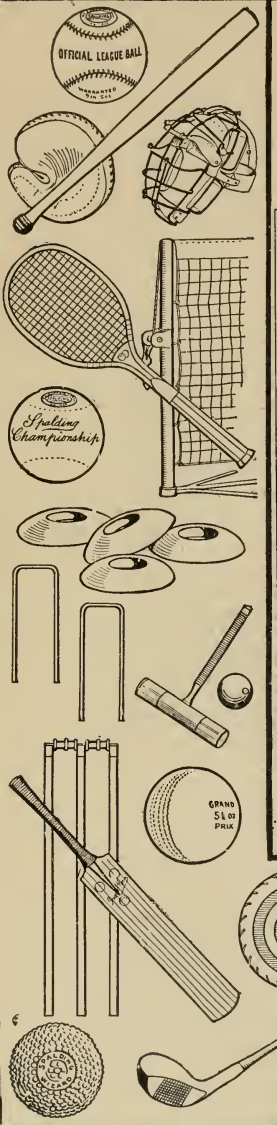
OFFI

IN all athletic contests the implements and apparatus must conform to the official rules as laid down by the governing bodies of the various sports, the object being to enable all contestants to compete under uniform conditions and with the same kind of an implement, for a record in any sport will not be allowed unless the official implement is used. That is why Spalding implements are always selected, because they never vary in weight or measurement, but invariably conform to the rules. . . . . .



THE above illustration shows the Stadium at St. Louis, in which the Olympic Games of 1904 were held. The field, which was designed and equipped by A. G. Spalding & Bros., was declared by experts to be the most perfect outdoor athletic plant ever built.



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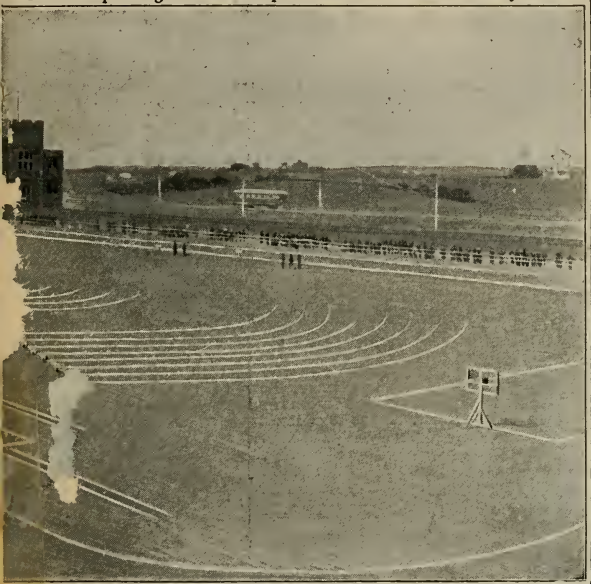
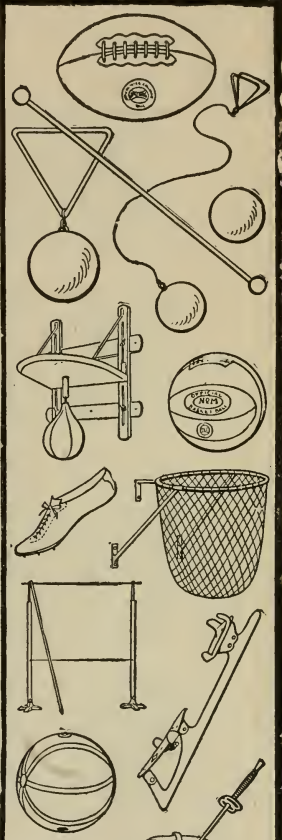
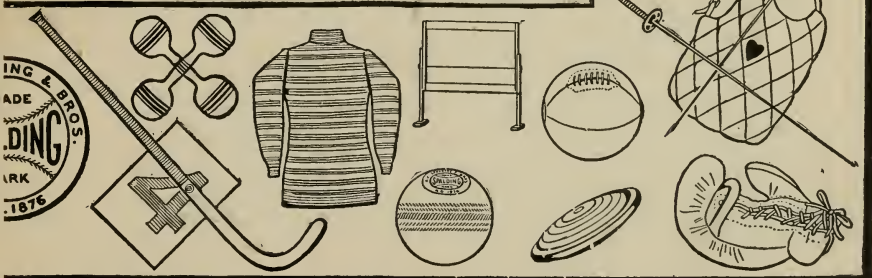
THE officials of the Louisiana Purchase Exposition, recognizing the importance of the OLYMPIC GAMES and the value of establishing authentic Olympic records, selected Spalding Athletic Implements for exclusive official use in connection with the Olympic Games (held in the Stadium of the Exposition, from May to November) because of their acknowledged superiority, reliability and official standing. For over a quarter of a century A. G. Spalding & Bros.' implements have been officially used.



THE building in the background is the Model Gymnasium, which was entirely equipped by A. G. Spalding & Bros. with an exhibit that was pronounced a model one by American and European experts and the International Jury of the Exposition.





No. 124—How to Become a Gymnast

By Robert Stoll, of the New York A. C., the American champion on the flying rings from 1885 to 1892. Any boy who frequents a gymnasium can easily follow the illustrations and instructions in this book and with a little practice become proficient on the horizontal and parallel bars, the trapeze or the "horse." Price 10 cents.

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By E. J. Giannini, of the New York A. C., one of America's most famous amateur oarsmen and champions. This book will instruct any one who is a lover of rowing how to become an expert. It is fully illustrated, showing how to hold the oars, the finish of the stroke and other information that will prove valuable to the beginner. Contains also the official laws of boat racing of the National Association of Amateur Oarsmen. Price 10 cents.

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By Gus Sundstrom, instructor at the New York A. C. It treats of every detail, the individual work of the players, the practice of the team, how to throw the ball, with illustrations and many valuable hints. Price 10 cents.

No. 135 — Official Handbook of the A. A. U. of the United States

The A. A. U. is the governing body of athletes in the United States of America, and all games must be held under its rules, which are exclusively published in this handbook, and a copy should be in the hands of every athlete and every club officer in America. This book contains the official rules for running, jumping, weight throwing, hurdling, pole vaulting, swimming, boxing, wrestling, etc., and is an encyclopedia in itself. Price 10 cents.

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Edited by G. T. Hepbron, the well-known athletic authority. It contains the official rules governing all sports under the jurisdiction of the Y. M. C. A., a complete report of the physical directors' conference, official Y. M. C. A. scoring tables, pentathlon rules, many pictures of the leading Y. M. C. A. athletes of the country, official Y. M. C. A. athletic rules, constitution and by-laws of the Athletic League of Y. M. C. A., all around indoor test, volley ball rules; illustrated. Price 10 cents.

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Contains directions for playing, diagrams of important strokes, description of grounds, instructions for the beginner, terms used in the game, and the official playing rules. Price 10 cents.

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Catch as catch can style. By E. H. Hitchcock, M. D., of Cornell, and R. F. Nelligan, of Amherst College. The book contains nearly seventy illustrations of the different holds, photographed especially and so described that anybody who desires to become expert in wrestling can with little effort learn every one. Price 10 cents.

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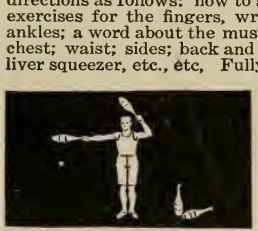

No. 143—Indian Clubs and Dumb-Bells

Two of the most popular forms of home or gymnasium exercise. This book is written by America's amateur champion club swinger, J. H. Dougherty. It is clearly illustrated, by which any novice can become an expert. Price 10 cents.

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How to become an athlete. It contains full instructions for the beginner, telling how to sprint, hurdle, jump and throw weights, general hints on training; in fact, this book is one of the most complete on the subject that has ever appeared. Special chapters contain valuable advice to beginners and important A. A. U. rules and their explanations, while the pictures comprise many scenes showing champions in action. Price 10 cents.

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A complete description of lawn tennis; a lesson for beginners and directions telling how to make the most important strokes; styles and skill of the experts; the American twist service; how to build and keep a court. Illustrated from photographs of leading players in action. Price 10 cents.

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No. 161—Ten Minutes' Exercise for Busy Men

By Dr. Luther Halsey Gulick, superintendent of physical training in the New York public schools. Anyone who is looking for a concise and complete course of physical education at home would do well to procure a copy of this book. Ten minutes' work as directed is exercise anyone can follow. It already has had a large sale and has been highly commended by all who have followed its instructions. Nearly 100 pages of illustrations and 100 of text. Price 10 cents.

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For many years books have been issued on the art of boxing, but it has remained for us to arrange a book that we think is sure to fill all demands. It contains over 70 pages of illustrations showing all the latest blows, posed especially for this book under the supervision of one of the best instructors of boxing in the United States, who makes a specialty of teaching and who knows how to impart his knowledge. They are so arranged that anyone can easily become a proficient boxer. The book also contains pictures of all the well known boxers. A partial list of the 200 pages of the book include: A history of boxing; how to box; the correct position; the hands; clenching the fist; the art of gauging distance; the first principles of hitting; the elements of defence; feinting; knockout blows; the chin punch; the blow under the ear; the famous solar plexus knockout; the heart blow; famous blows and their originators: Fitzsimmons' contribution; the McCoy corkscrew; the kidney punch; the liver punch; the science of boxing; proper position of hand and arm; left hook to face; hook to the jaw; how to deliver the solar plexus; correct delivery of a right uppercut; blocking a right swing and sending a right uppercut to chin; blocking a left swing and sending a left uppercut to chin; the side step; hints on training, diet and breathing; how to train; rules for boxing. Price 10 cents.

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Played with an air-inflated ball 6 feet in diameter, weighing about 50 pounds. A side consists of eleven men. This book contains the official rules and a sketch of the game; illustrated. Price 10 cents.

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Edited by Miss Senda Berenson, of Smith College. Contains the rules for basket ball for women as adopted by the conference on physical training, held in June, 1899, at Springfield, Mass., and articles on the following subjects: Psychological effects of basket ball for women, by Dr. Luther H. Gulick, superintendent of physical training in the schools of Greater New York; physiological effects of basket ball, by Theodore Hough, Ph. D.; significance of basket ball for women, by Senda Berenson; relative merit of the Y. M. C. A. rules and women's rules, by Augusta Lane Patrick; practical side of basket ball, by Ellen Emerson, B. K., Agnes Childs, A. B., Fanny Garrison. A. B.; A Plea for Basket Ball, by Julie Ellsbee Sullivan, Teachers' College, New York; diagram of field, showing position of team; illustrated with many pictures of basket ball teams. Price 10 cents.

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Gives methods of the best riders when training for long or short distance races; hints on training. Revised and up-to-date in every particular. Price 10 cents.

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Containing the rules for each game. Illustrated. Price 10 cents.

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By G. T. Hepbron, editor of the Official Basket Ball Guide. Contains full instructions for players, both for the expert and the novice, duties of officials, and specially posed full page pictures showing the correct and incorrect methods of playing. The demand for a book of this character is fully satisfied in this publication, as many points are included which could not be incorporated in the annual publication of the Basket Ball Guide for want of room. Price 10 cents.

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The need of an authoritative handbook at a popular price on these games is filled by this book. How to play each game is thoroughly explained, and all the difficult strokes shown by special photographs taken especially for this book. Contains the official rules for each game, with photographs of well known courts. Price 10 cents.

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Compiled by H. L. FitzPatrick of the New York Sun. Illustrated with portraits of leading players and contains most useful information for polo players in relation to playing the game, choosing of equipment and mounts; contains the official rules and handicaps of the National Association. Price 10 cents.

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This is undoubtedly the best work on dumb-bells that has ever been offered. The author, Mr. G. Bojus, of New York City, was formerly superintendent of physical culture in the Elizabeth (N.J.) public schools, instructor at Columbia University, instructor for four years at the Columbia summer school, and is now proprietor of the Liberty Street Gymnasium, at 121 Liberty Street, New York City. The book contains 200 photographs of all the various exercises, with the instructions in large, readable type. It should be in the hands of every teacher and pupil of physical culture, and is invaluable for home exercise as well. Price 10 cents.

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No. 204—Official Intercollegiate A.A.A. Handbook

Contains constitution, by-laws, laws of athletics, and rules to govern the awarding of the championship cup of the Intercollegiate Athletic Association of Amateur Athletes of America, the governing body in college athletics. Contains official intercollegiate records from 1876 to 1904, with the winner's name and time in each event, list of points won by each college, and list of officers of the association from 1889 to 1904, inclusive. To anyone interested the book is invaluable as a record. Price 10 cents.

No. 205—Official Handbook of the Public Schools Athletic League

This is the official handbook of the Public Schools Athletic League, which embraces all the public schools of Greater New York. It contains the official rules that govern all the contests of the league, and constitution, by-laws and officers. Edited by Dr. Luther Halsey Gulick, superintendent of physical education in the New York public schools, and Wm. C. J. Kelly, secretary of the league. Illustrated. Price 10 cents.

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No golfer should miss having a copy of this golf guide. Harry Vardon tells how to play game, with life-like illustrations showing the different strokes. The book also contains the revised official rules, official records, as well as pictures of many important players, and a directory giving name, address, membership and length of golf course of clubs in the United States. Price 10 cents.

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How to construct a green; necessary equipment; how to play the game, and the official rules as promulgated by the Scottish Bowling Association. Edited by Mr. James W. Greig. Illustrated. Price 10 cents.

No. 208—Physical Education and Hygiene

This is the fifth of the Physical Training series, by Prof. E. B. Warman (see Nos. 142, 149, 166 and 185), and a glance at the contents will show the variety of subjects: Chapter I—Basic principles; longevity. Chapter II—Hints on eating; food values; the uses of salt. Chapter III—Medicinal value of certain foods. Chapter IV—The efficacy of sugar; sugar, food for muscular work; eating for strength and endurance; fish as brain food; food for the children. Chapter V—Digestibility; bread; appendicitis due to flour. Chapter VI—Hints on drinking—Water, milk, buttermilk, tea, coffee; how to remain young. Chapter VII—Hints on bathing; cold, hot, warm, tepid, salt, sun, air, Russian, Turkish, cabinet. Chapter VIII—Hints on breathing; breathlessness, heart strain, second wind, yawning, the art of yogi. Price 10 cents.

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Contains advice for beginners; how to become a figure skater thoroughly explained, with many diagrams showing how to do all the different tricks of the best figure skaters, including the Mohawk, with all its variations; Q's, forward and backward, inside and outside; the crosscuts, including the difficult Swedish style; inside and outside spins; the grapevine, with its numerous branches, and many other styles, which will be comparatively simple to any one who follows the directions given. Profusely illustrated with pictures of prominent skaters and numerous diagrams. Price 10 cents.

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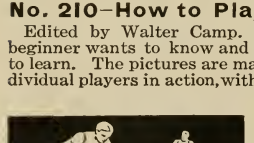
Edited by Walter Camp. The contents embrace everything that a beginner wants to know and many points that an expert will be glad to learn. The pictures are made from snapshots of leading teams and individual players in action, with comments by Walter Camp. Price 10 cents.



No. 211—Spalding's Official Foot Ball Guide

Edited by Walter Camp. Contains the new rules, with diagram of field as newly arranged; special chapters on the game, foot ball for the spectator, All-America teams, as selected by leading authorities; Middle West, Southern, Canadian foot ball, records, and pictures of all the prominent teams, embracing nearly 3,000 players. Price 10 cents.

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Contents: Necessity for exercise in the summer; three rules for bicycling; when going up-hill; sitting out on summer nights; ventilating a bedroom; ventilating a house; how to obtain pure air; bathing, salt water baths at home; a substitute for ice water; drinking ice water; to cure insomnia; asleep in two minutes; for those who ride wheels; summer outdoor exercise; profuse perspiration; danger of checking perspiration; dress, hot weather, etc., etc. Price 10 cents.

No. 214—Graded Calisthenics and Dumb-Bell Drills

By Albert B. Wegener, Physical Director Y. M. C. A., Rochester, N. Y. Ever since graded apparatus work has been used in gymnastics, the necessity of having a mass drill that would harmonize with it has been felt. For years it has been the established custom in most gymnasiums of memorizing a set drill, never varied from one year's end to the other. Consequently the beginner was given the same kind and amount as the older member. With a view to giving uniformity the present treatise is attempted. Price 10 cents

No. 215—Indoor Base Ball

America's national game is now vieing with other indoor games as a winter pastime. This book contains the playing rules, pictures of leading teams, and interesting articles on the game. Price 10 cents.

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By S. Karpf, Secretary of the American Bowling Congress, and one of the best posted men on bowling in America. Contents: History of the sport; diagrams of effective deliveries; how to bowl; a few hints to beginners; American Bowling Congress; the national championships; how to build an alley; how to score; spares—how they are made. Rules for cocked hat, cocked hat and feather, quintet, battle game, nine up and nine down, head pin and four back, ten pins—head pin out, five back, the Newport game, ten pin head pin game, duckpin game, head pin game, Dayton candle (rubber neck) pin game, New England candle pin game. Illustrated with portraits of all the prominent bowlers. Price 10 cents.

No. 217—Official Athletic Almanac

Compiled by J. E. Sullivan, Chief Department Physical Culture, Louisiana Purchase Exposition, and Director Olympic Games, 1904. The only annual publication now issued that contains a complete list of amateur best-on-records; complete intercollegiate records; complete English records from 1866; swimming records; interscholastic records; Irish, Scotch and Australasian records; reports of leading athletic meets; skating records; important athletic events and numerous photos of individual athletes and leading athletic teams. This year's issue is a special Olympic Games number and contains the only full account of the Olympic Games of 1904, and a review of Anthropological Days at the World's Fair stadium, being the first time on record where athletic events were contested in which savages were the exclusive participants, thus forming the first authoritative basis for a comparison between the abilities of the civilized athlete and the savage. Price 10 cents.

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